



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,325	09/06/2000	Steven D. Nelson	14073US01	9079

23446 7590 02/03/2004

MCANDREWS HELD & MALLOY, LTD  
500 WEST MADISON STREET  
SUITE 3400  
CHICAGO, IL 60661

EXAMINER
----------

CHAMBERS, TROY

ART UNIT	PAPER NUMBER
----------	--------------

3641

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action</b>	Application No. 09/656,325	Applicant(s) NELSON ET AL.	
	Examiner Troy Chambers	Art Unit 3641	

**--The MAILING DATE of this communication appears on the cover sheet with the correspond nc address --**

THE REPLY FILED 05 December 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: \_\_\_\_\_

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
10. ☒ Other: see attached

**MICHAEL J. GARONE**  
**SUPERVISORY PATENT EXAMINER**

### **DETAILED ACTION**

1. On 05 November 2003, applicant sent a response/amendment to the previous action. Before the Examiner responded to the 05 Nov 2003 amendment the applicant contacted the Examiner on 04 Dec 2003 to briefly discuss the amended claims. During the discussion the Applicant notified the Examiner that a new amendment would be faxed the next day to the Office to address the lack of response to the rejection of claims 62 and 63. Records show that the applicant did fax a response the next day, however, it was several weeks before the Examiner received it. In the meantime, the Examiner sent a response to the 05 Nov 2003 amendment.
2. This Office Action is in response to the amendment faxed to the Office on 05 Dec 2003. Because no new prior art is presented, the date for response will be counted from the mailing date of the previous Office Action (mailed 12/18/03).

### ***Response to Arguments***

1. With respect to the rejection of claims 35-37 under 35 U.S.C. 112 (1), the applicant's arguments are persuasive and the rejection has been withdrawn.
2. With respect to the rejection of claims 37 under 35 U.S.C. 112(2), the applicant's arguments are unpersuasive because the specification requires the ERC to have a capacitance of 2 microfarads (spec., pg. 8, ll. 10-12).
3. Applicant's arguments with respect to claims 1, 4-12 and 31-37 as being rejected under 35 U.S.C. 102(b) as anticipated by Adams have been considered but are moot in view of the new ground(s) of rejection. The "single command" feature claimed by the applicant has been made obvious by the Jullian reference.

Art Unit: 3641

4. With respect to the rejection of claim 4 Adams discloses a multiplexer for *reading* and *sending* control integrity to the ECU (see rejection for reference cite).

5. Applicant's arguments with respect to claims 6 and 9 have been considered but are moot in view of the new ground(s) of rejection. The "bleed resistor" feature claimed by the applicant has been made obvious by the Williams reference.

6. Applicant's arguments with respect to claim 13 have been considered but are moot in view of the new ground(s) of rejection.

7. With respect to the rejection of claims 33 and 34, Darby discloses a DC-to-DC power converter 260. Controllers 200 comprise capacitors 240 that receive increased voltages from the converters 260. The devices are capable of detonating only when the proper voltage level is sensed (25 volts) and a unique signal is received.

8. Applicant's arguments with respect to claims 35 and 37 have been considered but are moot in view of the new ground(s) of rejection.

9. With respect to the rejection of claims 62 and 63 applicant argues, "Jullian does not disclose or suggest a networked ordnance system where a bus controller automatically assigns unique identifiers." However, Jullian was not used to the extent argued by applicant. Jullian was used to show that blasting caps can be assigned unique identifiers and that one of ordinary skill in the art would have found it obvious to combine this feature with the bus controller system of Adams/Darby.

10. With respect to the rejection of claims 64 and 65 under 35 U.S.C. 103(a), the applicant's arguments are moot in because the "single command" subject matter claimed by the applicant has been made obvious by Jullian.

Art Unit: 3641

11. New claims 66 and 67 have been rejected as provided below.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 37 recites the phrase "on the order of" 2 microfarads. The phrase "on the order of" was held to be indefinite because the specification lacked some standard for measuring the degree intended. *Ex parte Oetiker*, 23USPQ2d 1641 (Bd. Pat. App. & Inter. 1992).

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 33, 34, 66 and 67 are rejected under 35 U.S.C. 102(b) and (e) as being anticipated by U.S. Patent No. 6166452 issued to Adams et al. ("Adams") and U.S. 5825098 issued to Darby. Adams discloses a plurality of igniters 10 connected to a networked electronic ordnance system via a bus controller (ECU). Darby discloses the details of the communication details of the ECU and the plurality of igniters. Both Darby and Adams qualify as prior art under a single

Art Unit: 3641

rejection under 35 U.S.C. 102 because Adams incorporated Darby into its specification by reference. The analog condition to firing condition subject matter of applicant's claim 33 is anticipated by the analog to digital converter disclosed in Darby. (See, Darby, col. 8, ll. 12-15; col. 14, ll. 3-40) and the DC-to-DC power converter 260. Controllers 200 comprise capacitors 240 that receive increased voltages from the converters 260. The devices are capable of detonating only when the proper voltage level is sensed (25 volts) and a unique signal is received.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 4, 5, 7, 8, 10-12 and 31-32 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6166452 issued to Adams et al. ("Adams") and U.S. 5825098 issued to Darby in view of U.S. Patent No. 5014622 issued to Jullian. Adams discloses a plurality of igniters 10 connected to a networked electronic ordnance system via a bus controller (ECU). Darby discloses the details of the communication details of the ECU and the plurality of igniters. Both Darby and Adams qualify as prior art under a single rejection under 35 U.S.C. 102 because Adams incorporated Darby into its specification by reference. Adams/Darby does not disclose all the subject matter of applicant's claim 1. Jullian discloses a blasting system including the ability to address, with a single command, as few as one or all pyrotechnic devices

Art Unit: 3641

(refer to at least columns 7 and 8). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the device of Adams and Darby with the global communication capabilities disclosed in Jullian. The suggestion/motivation would have been to allow the ECU to query all pyrotechnics at the same time.

15. With respect to claims 1, 10, 31, 32 refer to Adams, col. 4, line 64 to col. 5, ll. 6 (bus controller); col. 5, ll. 14-15 (plurality of igniters); and, col. 5, ll. 33-35 (unique signal). Jullian discloses a blasting system comprising a blaster and blasting caps, the blaster operable to assign the blasting caps a unique identifying address (Jullian, col. 15, ll. 10-20 and col. 16, ll. 28-38)

16. With respect to claim 4, refer to Adams, col. 5, ll. 29-32 (multiplex signals).

17. With respect to claims 5 and 8, Adams discloses capacitor 56.

3. With respect to claim 7, refer to Adams, Fig. 5.

4. With respect to claims 11 and 12, refer to Adams, col. 5, ll. 1-13 (serial and parallel communications).

18. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams/Darby in view of Jullian and in further view of U.S. Patent No. 5206455 issued to Williams. Adams/Darby and Jullian disclose a combined system as described above with the exception of the subject matter of claims 6 and 9. Williams discloses such subject matter including bleed resistors (col. 22, ll. 53-60). At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the combined device of Adams/Darby and Jullian with the bleed resistor of Williams. The suggestion/motivation for doing so would have been to provide an extra safety feature to bleed off current not intended to detonate the igniters.

Art Unit: 3641

19. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adams in view of Jullian and in further view of U.S. Patent No. 6403887 issued to Kebabjian. Adams and Jullian disclose a networked ordnance system as described above. However, Adams and Jullian do not disclose the use of at least one shielded twisted pair cable. Kebabjian discloses a shielded twisted pair cable 10. At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the network of Adams with the cable of Kebabjian. The suggestion/motivation for doing so would have been to prevent spurious noise and provide for high-speed communication.

5. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams/Darby. Adams/Darby discloses an electronic ordnance system as described above including a discharge capacitor. Adams/Darby does not disclose a capacitor that is charged in 5 msec or less. However, at the time of the invention, one of ordinary skill in the art would have found it obvious to provide the electronic ordnance system of Adams/Darby with a capacitor that charges in approximately 5 msec or less. The igniter in Adams/Darby is associated with vehicle protection devices in vehicles such as airbags. Hence, it is necessary to charge and discharge the safety devices as fast as possible. To select a capacitor with the charge time claimed by the applicant is only a matter of engineering design choice since charge time is merely a function of the capacitance in volts, load charge, and power supply charge.

6. Claims 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admas/Darby in view of Jullian. Adams/Darby discloses an electronic ordnance system as described above. However, Adams/Darby does not disclose the subject matter of applicant's claims 62 nor 63. Jullian discloses such subject matter. Specifically, Jullian discloses a blasting

Art Unit: 3641

system comprising a blaster and blasting caps, the blaster operable to assign the blasting caps a unique identifying address (Jullian, col. 15, ll. 10-20 and col. 16, ll. 28-38). At the time of the invention, one of ordinary skill in the art would have found it obvious to provide Adams/Darby with the address assigning capabilities of Jullian. The suggestion/motivation for doing so would have been to make sure that each blasting cap has a unique address to avoid assigning errors that could have taken place during manufacturing in which 2 blasting caps could have received the same address.

7. Claims 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6341562 issued to Brisighella in view of Adams and in further view of Jullian. Brisighella discloses a plurality (col. 1, ll. 37-38) of initiator assemblies 28 to initiate a cable cutter (col. 1, ll. 38). However, Brisighella does not disclose the networked system of Adams. Adams discloses an electronic ordnance system as described above and Jullian discloses the ability to issue global commands to one or all pyrotechnics. At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the cable cutter (with initiator) of Brisighella with the bus ordnance system of Adams. The suggestion/motivation for doing so would have been to allow for the communication, testing and identification of each cutter (igniter) in the system.

### *Conclusion*

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 3641

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (703) 308-5870. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (703) 306-4198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-7687.



MICHAEL J. CARONE  
SUPERVISORY PATENT EXAMINER